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# Foreign Agriculture

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# South Korea Boosts Milk Production, Despite Obstacles

By Edward Karpoff

An infant industry, presently based on imported Holstein-Friesian heifers, is busily producing milk in South Korea. The national herd is expected to continue expansion at a rate that will outpace development of domestic feed supplies, resulting in increased requirements for feedgrains, which are imported mainly from the United States.

Growth of South Korea's dairy industry reflects that country's deliberate policy of developing milk production and distribution, despite limited land resources and other obstacles.

The resulting contributions to national growth have had impacts beyond those measured in national income statistics, and in addition are setting in motion some foreign trade forces that may surprise the sponsors of the dairy and other livestock production programs.

The potential surprise lies in the area of livestock feed requirements. Rising incomes in Korea are boosting demand for livestock products, and livestock feed needs are building up faster than domestic feed resources can be expanded.

A viable dairy industry eases the solutions to some of the pressing social and economic problems that have emerged in Korea's rapidly developing economy.

Among these are the need for more and better food for a growing population with rising income, and the need to stem the flow of workers to urban centers by developing income opportunities in the countryside through an extensive dairy industry.

Because of the need to conserve foreign exchange and provide employment, Korea has chosen not to import nonfat dry milk (NFDM) and other dairy products.

A persistent chronic world surplus of milk has resulted (and continues to result) in opportunity for Korea to buy milk products in open world

markets for less than it would cost to produce equivalent products at home.

Thus, it cost Korea more to produce its 1975 milk output of 165,000 metric tons at home than it would have cost to import equivalent dairy products.

Fluid milk could be reconstituted in Korea from imported NFDM plus milkfat or other oil at a 1976 ingredient cost reflecting 38-cent NFDM and \$1.15 butter (prices per kilogram) in world markets.

These prices indicate an ingredient cost of about \$8 for the preparation of 100 kilograms of reconstituted milk; the corresponding milk price at the Korean farm is more than \$31 per 100 kilograms. The costs of reconstitution are nominal, and are claimed to be about equivalent to the costs of collection of local milk from farm to manufacturing plant.

About half of Korea's milk is used in fluid form and about half is processed. The principal processed products are dried milks, including dried milks incorporated in infant feeding compounds. All told, the 1976 milk supply was equivalent to less than 5 kilograms (liquid basis) per capita.

The distribution of this relatively small supply is very uneven, with consumption tending to be concentrated among infants, particularly on account of the milk-containing infant feeding compounds; urban dwellers, since fluid products are distributed mostly in cities; and the moderately well-to-do, since dairy products for use in the home are expensive relative to traditional foods.

Because milk is not a part of the traditional Korean diet, dairy distributors there do not have to conform to preconceived public tastes regarding "palatability".

In the fluid sector, ultra-

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*The author, an economist with the Dairy, Livestock, and Poultry Division, Foreign Commodity Analysis, visited South Korea early in 1977 under the auspices of the International Bank for Reconstruction and Development.*



Left: First air shipment of Holstein-Friesian heifers arriving in South Korea. Below: Korea's President Park Jung-Hee inspects Holstein-Friesian heifers early in his country's dairy development.



high temperature (UHT) milk is among the items offered for retail sale. UHT milk is sold in one-trip packages of which the largest is 500 milliliters (slightly more than a pint).

The heat treatment of this product permits holding for weeks without refrigeration, and buyers evidently do not object to either its slightly cooked flavor or to its warmth; it is drunk at room temperature.

Smaller packages—down to 180 milliliters—contain flavored milks as well as white, and are sold by street vendors in competition with bottled soft drinks. Fermented milk drinks are street-vended in even smaller containers.

Ice cream is a readily available novelty in Korea, but other dairy items considered staples in the West are not commonly sold there. Neither butter nor cheese is readily available to the Korean consuming public.

Commercial dairying is relatively new in Korea; until 1963 the country had fewer than 1,000 milk cows.

Outside of dairy herds, the traditional Korean cow is a docile red animal of 600 to 700 pounds whose dual functions are to serve as a draft and brood animal before her aged carcass becomes part of the national beef supply.

Commercial milk production is based almost entirely on imported Holstein-Frie-

sian cattle, with the United States a principal supplier.

The 1975 herd, in a semi-official estimate, numbered almost 40,000 milk cows. The imports of the preceding 7 years totaled about 20,000 head. Allowing for lags between importation and the onset of milking, and for herd mortality, the dependence of current milk cow numbers upon prior imports is obvious.

On the farm, Korean dairy practices reflect certain prevailing economic relationships, notably the low cost of labor relative to the prevailing price of milk and the low cost of concentrate feed compared with both the cost of alternative feedstuffs and the value of milk.

**"Anticipating (further) development of the Korean dairy and poultry economies . . . feedgrain imports by Korea are pointed toward a steady increase"**

As a reflection of the low cost and general availability of intelligent trainable farm help, employment of a herdsman (cowboy) to attend a herd of 10 milking cows is not uncommon. Ten-cow herds, however, are larger than the usual enterprise. While some highly commercialized large herds (200-300 cows) exist, the usual supplier to Korean receiving plants is more likely to be milking five to eight cows.

From the point of view of the typical small Korean farmer, one of the important limitations on the size of the dairy herd that he can handle is the amount of forage that he can grow. Some of this is the winter crop grown on the paddy land. In summer, the paddy land grows rice, but in the off-season the forage crop competes with winter barley—in Korea both food and a feedgrain.

An additional amount of roughage feed comes from silage—typically corn silage—grown on land that must be diverted from production of food crops. About the only forage that can be provided without impairing food output is pasture.

Pasture in Korea does not mean grazing; pasture typically is cut green (generally by hand) and carried to the cows, who remain on dry lot near the barn. Its harvest is a laborious process, among other reasons because the pasture is typically confined to steep slope lands not usable for tilled crops.

Generally these slopes are relatively distant from the farmsteads, which are either in villages or near the paddies. The slopes are expensive to develop as pasture, and as a matter of fact initially would probably not be reclaimed from the native scrub pine if not for Government subsidy.

After some years of experience, however, it is possible that farmers will find

that grass and the legumes are low-cost feed, particularly if practical grazing techniques are developed.

The subsidy for pasture development is one of the principal Government incentives for dairy development, along with a comprehensive financing program involving both Government and the World Bank, and a favorable guide price for farmers' milk sales.

Because the production of pasture and forage is slow and difficult, while grain-based dairy concentrate is readily available at a price that is favorable for feeding, the prudent farm management decision is to take the rapid route toward high milk production—that is, buy concentrate feed for immediate use, rather than incur the delays involved in pasture development and forage production.

Following this course, Korean dairymen have achieved an average output of 4,200 liters per cow (1975), a level that compares very favorably with relatively developed countries such as the Netherlands (4,600), or Denmark (4,400). The current U.S. level, about 10,900 pounds per cow, is equal to 4,900 liters.

If the Korean dairy herd continues to expand at the 20 percent annual rate that is implied by the 1981 national production goal and if other grain-using livestock enterprises also grow at the high rates implied by the plan, the feed requirements will grow in like measure.

In the likely event that forage production increases will not be able to keep pace with the indicated increases in feed requirements, it is evident that an increasing part of the total will have to be supplied by concentrates.

Some of the available concentrates, such as barley, are supplied in part from domestic production. But the

domestically produced supply is not subject to ready increase without impinging upon direct food use.

An additional fraction of the feed concentrate supply is available as byproduct from milling operations that supply food markets; these operations will expand in line with the expected 2- to 3-percent annual increase in human population.

But the biggest share of the increase in feed concentrate supply will have to come from grain imports, which in 1975 provided 40 percent of the feed concentrate supply.

Most of the 480,000 tons of feedgrains that Korea imported in 1975 was corn, of which about 70 percent came from the United States.

Anticipating development of the Korean dairy and poultry economies at the 20-percent annual growth rate stated in Ministry of Agriculture plans—and further anticipating that domestic feed production (both concentrate and forage) will expand at a slower rate—it is obvious that feedgrain imports by Korea are pointed toward a steady increase. □

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## **Korean Wheat Team on U.S. Trip**

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Three representatives of South Korea's super-cereal (pearled and steamed wheat, used as a rice extender) industry and a Korean Ministry of Agriculture official met with U.S. wheat producers, industry leader, and USDA officials in late September-early October to discuss possible procurement of U.S. wheat.

The Korean Government has agreed to supply 101,000 metric tons of super-cereal to processors during July-December 1977.

# Brazil's Citrus Industry Sets Record in 1976

Brazil pushed orange and concentrated orange juice production to new records in 1976/77. This year, output of orange juice concentrate is expected to remain at last year's level, while exports may drop. In 1977/78, output of oranges, estimated at 145 million boxes, will be less than the 1976/77 record, but still 23 percent greater than the previous record in 1975/76.

Since 1963, when a Florida frost gave rise to the Brazilian citrus juice industry, Brazil has pushed production and exports of orange juice to the point where it is now the world's largest juice exporter. In 1976/77, the industry again set records in the tonnage of oranges and orange juice it produced and in the amount of concentrated orange juice exported.

Although production of oranges and orange juice is expected to drop slightly in

1977/78 because of heavy rains during the flowering and fruit set periods, production of orange juice concentrate is expected to remain at last season's level, although orange juice exports may fall off.

In São Paulo, Brazil's predominant citrus-producing State, the number of bearing trees is expected to reach 57.7 million, including 10 million trees that will start bearing this season. The number of trees just reaching the bearing stage has been partially offset by substantial uprootings of unproductive trees, a process said to be continuing.

Brazil's production of or-

anges, estimated at 145 million boxes in 1977/78, will be 2.5 million boxes less than the 1976/77 record, but still 23 percent greater than the previous peak of 118 million boxes in 1975/76. (Regardless of product, boxes weigh 40.8 kg.)

São Paulo will see its orange outturn fall from 99.2 million boxes in 1976/77 to 95 million this marketing year. In 1975/76, that State's orange crop amounted to 87.0 million boxes. Orange production elsewhere in Brazil will drop an average of 1 percent.

In 1976/77, five of Brazil's most important orange-producing States grew 29.3 million boxes: Rio de Janeiro, 10.7 million boxes; Minas Gerais, 6.5 million; Rio Grande do Sul, 6.6 million; Bahia, 3.0 million; and Sergipe, 2.4 million. In addition, about 19.2 million boxes were grown in the remaining States. In 1977/78, orange output by all Brazilian States, excluding São Paulo, is forecast at 48.0 million boxes.

In São Paulo this season, the concentrate juice industry is expected to consume about two-thirds of total State orange production. Another 20 percent will be utilized as fresh fruit within the State, and the remainder will be shipped to other States or exported. National consumption of fresh oranges will account for about 54 percent of Brazil's production.

Sales of fresh fruit from São Paulo's production are expected to rise by a million boxes to approximately 26 million. Of that total, about 75 percent is expected to be sold within the State. Brazil's fresh citrus exports for 1976 amounted to about 1.25 million boxes, shipped principally from São Paulo. Exports for the current year are expected to be 750,000 boxes.

Also a major producer of other citrus fruits, São Paulo grows tangerines, lemons, limes, and grapefruit. That state's tangerine production is estimated to have been 15.6 million boxes in 1976/77, and is currently forecast at 14.4 million for 1977/78. The State's lemon/lime production is estimated at 9.4 million boxes for the season just ended, and is expected to be 100,000 boxes less for 1977/78.

Although grapefruit production earlier had been estimated at 70,000 boxes for 1976/77, actual output was far less—between 50,000 and 60,000 boxes. Grapefruit production in the 1977/78 season is expected to remain about the same as last year's.

Orange juice concentrate exports, mostly 65° brix, totaled 210,000 tons, valued at \$100.9 million in calendar 1976. In 1975, exports were 181,000 tons, worth \$82.2 million.

Of the approximately 210,000 tons, six countries each purchased more than 10,000 tons. By far the largest volume went to the Netherlands, 67,286 tons, valued at \$32.4 million, followed by West Germany, with takings of 43,497 tons, valued at \$20.9 million. Sweden took 18,226 tons worth \$8.6 million, the United States, 16,675 tons, \$7.8 million; Canada, 15,836 tons, \$7.4 million; and Israel, 14,505 tons, \$7.1 million.

Brazil's 1976 exports of other citrus products, in tons, with value in U.S. currency, were: Frozen concentrated tangerine juice, 2,080, \$1.41 million; grapefruit juice concentrate, 553, \$236,000; lemon/lime concentrate, 1,874, \$790,000. Citrus fruit shipments: Fresh oranges, 36,404, \$5.3 million; fresh tangerines, 1,825, \$323,000; fresh lemons, 400, \$162,000; fresh grapefruit, 852, \$141,000. □

Based on dispatch from Robert J. Wicks, U.S. Agricultural Officer, São Paulo.

# Syria Updating State-Run Poultry Farms

By Shackford Pitcher

Syria is improving its public-sector poultry farms and at the same time is encouraging private producers to increase production in order to reach the goals set in the country's 1976-80 development plan. If the planned production level is reached, Syria may be able to reduce its poultry meat and egg imports, although it may be some time before any real impact is felt.

**W**ith the goal of boosting poultry production enough to spur domestic consumption and also reduce imports, the Syrian Government is undertaking a major program to expand State-operated poultry farms.

This growth may markedly reduce future exports to Syria of eggs and poultry meat, but it may be several years before significant impact is felt.

The authorities also are encouraging poultry output in the private sector in order to help reach the national production goals set at the 1975 Congress of the Baath Party—the country's principal political organization. These goals were incorporated in the current 5-year plan for 1976-80.

During the Lebanese conflict, Syria was cut off from Lebanese supplies of day-old chicks and table eggs. This was particularly significant since Lebanon's poultry center in the Bekaa Valley is less than 50 miles from many of the Syrian poultry farms located near Damascus. These—as well as poultry farms in other areas—had been served by Lebanon

ese hatcheries, whose trucks maintained regular delivery services.

The Lebanese situation disrupted other aspects of Syria's poultry development, as, since mid-1975 many of the services—as well as the source of some of the supplies and specialized equipment formerly available to the larger commercial poultrymen in Syria—were cut off. Consequently, compensating infrastructure has had to be strengthened locally. At the same time, many experienced Syrian workers—previously employed on Lebanese poultry farms—returned to Syria and started their own poultry operations.

The Syrian Government has been contracting with a number of international firms, and bilaterally with several countries, to build and equip eight State poultry farms. Three of these were to have been fully operational by early 1977, but none is yet operating at planned capacity, and it is unlikely that all of them will reach full capacity before 1979.

When fully operational, the eight State farms will have an annual production capacity of 4.5 million broilers, 205 million eggs, 4.4

million day-old chicks, and 200,000 pullets from imported day-old chicks for parent stock. The 1976 output of the three operational farms—although relatively low—still stood at 1,622 tons of broilers and 7 million eggs.

However, total 1976 production of broilers and eggs—commercial, private and State—was at record levels—an estimated 13,700 tons of poultry meat and about 675 million eggs.

The Agency responsible for all State farms is the General Organization for Poultry (GOP), one of four semiautonomous business organizations within the Ministry of Agriculture and Agrarian Reform.

Poultry farms are classified according to size and ownership, and commercial farms are licensed. The licensing is tied to controls over feed distribution and the regulating of product sales.

In 1976, the 311 licensed farms—private farms with more than 1,000 bird capacity—accounted for one-third of Syria's broiler production and over 30 percent of its egg output. Commercial farms, with a capacity of less than 1,000 birds, accounted for 30 percent of the broilers and 6 percent of the eggs in 1976.

Backyard farm flocks continue to be important sources of eggs and poultry meat, providing an estimated 275 million eggs and 2,900 tons of broilers in 1976. Some 64 poultry cooperatives were operating in that year, with an estimated output of 144 million eggs and 476 tons of broilers. These cooperatives are generally organized to facilitate procurement of feeds, operating and investment loans, and the marketing of poultry and products.

Starting in 1975, there was an upsurge in expansion

of private poultry operations, with some 215 new farms registered, most of them broiler operations. Additional farms were registered in 1976, and at the end of that year an estimated 130 new private poultry operations were under construction. Although much of the recent expansion was in broiler operations, the returns to layer operations have become more attractive, and some individual farmers are now switching to layers.

Retail prices of both broilers and eggs are subject to price ceilings—LS7.80 per kilogram (91 cents per lb) for broilers and LS7.50 per tray of 30-60 gram eggs (77 cents per dozen). When supplies become extremely tight (as for eggs in early 1977), controls are often ignored in some consuming centers. The demand for eggs is so great at the present time that even with eggs selling above the maximum retail price, supplies are frequently so scarce customers cannot buy all they want.

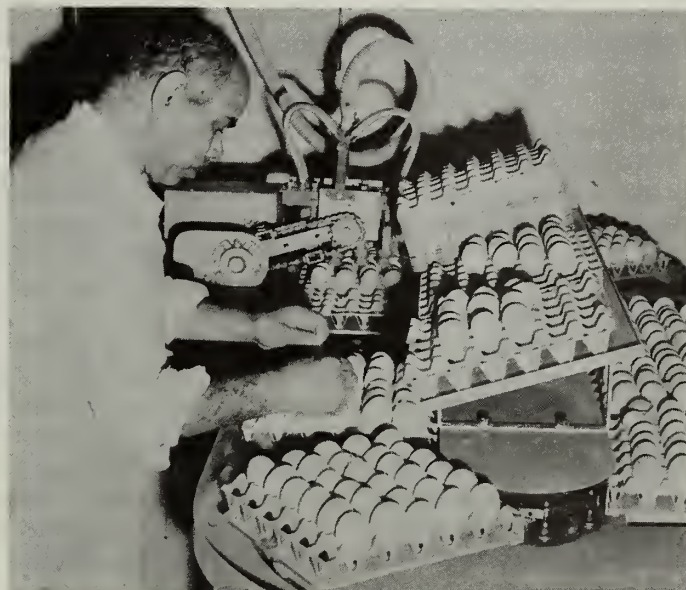
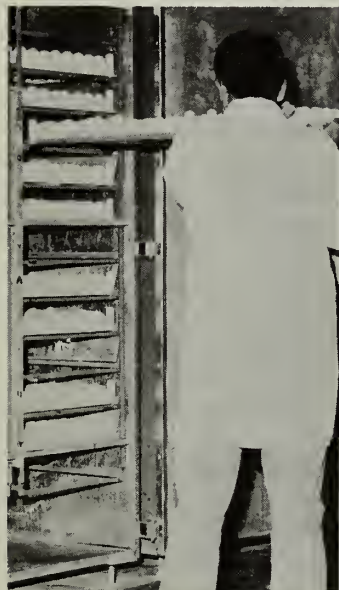
The Syrian feed industry is also undergoing extensive expansion commensurate with growth and needs of the poultry industry. Until the Aleppo feed mill opened in 1976, practically all feed manufacturing and mixing was done by private feed mills. In early 1977, a second State-owned feed mill was to open in Hama, designed to manufacture 20 tons of feed per hour, the same capacity as that of the Aleppo mill.

The construction of these two State-owned mills tended to dampen the private sector's interest in expanding existing facilities, although some replacement of equipment has taken place in private feed mills in the past 2 years. There are about 17 private feed mills—with a capacity of 200,000 tons of feed annually—serving poultry

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*Clockwise from top left: Broiler parent stock at Sidnaya State poultry farm, near Damascus; farm workers preparing hatching eggs prior to candling and sorting, and loading incubators at the farm. Eight State poultry farms are being built, but will not be fully operational before 1979.*



try farms lacking feed mixing equipment. Nearly half of the cooperatives—as well as all of the State farms—do their own feed mixing.

All feed is distributed in bags at the present time, and few poultry farms are able to handle bulk grain shipments for mixing with feed concentrates. Various reports, based on surveys of the Syrian poultry industry, indicate that lack of an efficient feed manufacturing and distribution system presents a serious constraint to rapid and economic development of poultry production.

Partly because of these reasons, Syria depends heavily on imports of eggs and poultry meat to meet its consumption requirements, although the levels fluctuate

from year to year. Imports in 1974 were relatively large, but those of 1975 fell to unusually low levels.

Imports of shell eggs that year totaled only 2,629 metric tons—or about 48 million eggs—compared with 5,019 tons in 1974. In both years, Lebanon and Romania supplied practically all of the imports.

Imports of poultry meat in 1975—605 tons—likewise were off sharply from the 2,541 tons of 1974, as the main sources of supply shifted from Lebanon and France in 1974 to the People's Republic of China and Hungary in 1975.

Frozen broiler imports in 1976 are believed to have totaled some 1,600 tons—1,000 tons from Brazil, and

600 tons from Bulgaria. With the loss of egg supplies from Lebanon, egg imports for the year may have been down sharply, however. Imports during the latter part of 1976 had recovered somewhat and were entering the country at the rate of 20,000 cases a month, according to the trade. Import licenses for 2,341 tons were issued for the entire year.

Frozen broiler imports are handled by the General Consumption Institution (GCI), which generally purchases by tender (request for offers). The most recent tender for broilers was announced in late March 1976, with the offer deadline, originally set for April 15, 1976. Delivery was to be in May and June. The deadline was ex-

tended, however, and, apparently, larger quantities were contracted in addition to the 1,000 tons originally announced.

The GCI requires a bid bond of 5 percent of the offer price, and suppliers must provide a performance bond of 10 percent of the contract price. The requirement is usually for frozen broilers weighing 900-1,200 grams each. (The GCI's cable address is MASKI, and the mailing address, P.O. Box 2552, Damascus.)

Handling of imported feeds and feed ingredients is the sole responsibility of the Government's General Organization for Fodder (GOF) in the Ministry of Agriculture. The actual buying from overseas suppliers is

handled by TAFCO, another State agency. Separate Government agencies are responsible for marketing locally produced barley and cottonseed meal.

Their activities are coordinated with GOF's, insofar as feed ingredient distribution is concerned. This, in effect, means that a large percentage of the feed in-

gredients entering commercial channels (excluding purchases and exchange between farmers in the same locality) is the responsibility of the public sector.

Generally, when feed ingredients are to be imported, an international request for offers is announced—with the quantity, specifications, delivery terms, and final

dates for submitting offers given in the announcement. These announcements appear in the Government's tender bulletin.

In some cases TAFCO cables details of the tender to a list of international suppliers to encourage them to submit offers.

Since the conditions for submitting offers call for bid

bonds and submission of certain other information in addition to prices, any firm interested in submitting such an offer should become acquainted with the general conditions in advance, so that it can make its offer as soon as the tender is announced.

Although Syrian ports at present lack bulk-handling

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## Doing Business in Syria: Tips for the U.S. Exporter

- **The import of most farm products into Syria is done by the public sector.** The major Government agencies handling products of interest to U.S. exporters are TAFCO (Foreign Trade Organization for Chemicals and Foodstuffs), the General Establishment for Cereal Processing and Trade, and the General Organization for Tobacco.

- **Purchases by Government agencies** are generally handled by an international call for offers (tenders). Tender conditions and specifications are often announced with little leadtime before offers must be submitted. Thus it is most helpful for a prospective U.S. exporter to become acquainted with the general conditions in advance.

- **Government tenders** generally call for a 5 percent bid bond, which must be submitted with the offer. It is advisable for U.S. exporters to consult their banks in advance of a tender regarding the steps necessary to open up such a bid bond. The successful bidder is generally required to put up a performance bond amounting to 5 to 10 percent of the contract. Normally there is a stamp charge of up to 9.2 per mil. Bank charges are 0.375 percent per quarter or portion thereof.

- **Importing into Syria** by the private sector follows complex regulations, which are best handled by a local agent or representative.

- **Imports from the United States** require prior licensing before shipment is effected.

- **Practically all imports** should be licensed directly from the country of origin.

- **All imports** should be made through Syrian ports and insured in Syria.

- **Imports of certain products** are reserved or restricted to public sector companies. Some examples are:

- TAFCO: Coffee, tea, rice, some canned meats and fish, raw and white sugar, seed and table potatoes.

- PHARMEX (Foreign Trade Organization for Pharmaceutical Products): Milk for infants, etc.

- GOTA (General Organization for Trade and Distribution): Wines, alcoholic beverages.

- GCI (General Consumption Institute): Most fresh, chilled, and frozen meats and poultry.

- GOT (General Organization for Tobacco): Unmanufactured tobacco.

- **Imports requiring** Ministry of Health approval are some of the above articles, including powdered milk, baby food

preparations, and some vegetable oils. Others such as live animals and agricultural seeds need approval from the Ministry of Agriculture and Agrarian Reform.

- **Prohibited** are imports of certain items such as honey, kidney beans, most processed fruits and vegetables, peanuts, licorice roots, and some vegetable oils—except when exemptions are granted under special circumstances and regulations.

- **Imports by the private sector** are subject to foreign currency regulations, which include the acceptance of the exporter's settlement of the value of exports under credit terms for a 1-year minimum period. At the present time most sellers are receiving payment promptly, as Syrian importers are permitted to transfer funds from banks in neighboring countries. Some agricultural imports, such as ghee, cheeses of all kinds, certain fruits from neighboring Arab countries, olive oil, and forage products are exempted from these regulations.

- **To stimulate commerce** with the United States, the Syrian Government permits limited importation of most U.S. goods exhibited during the fair against a quota assigned to the American Pavilion at the Damascus International Fair (held annually from July 25 to August 20); the goods are exempt from most of the preceding regulations.

The quota amounts to a kind of bonus accorded to countries that participate in the Fair. The amount of the quota depends upon the volume of commerce between the two countries and the size of the U.S. pavilion; the 1977 quota for U.S. goods is \$65,000.

Registered Syrian importers of U.S. goods may apply to the U.S. Embassy at Damascus for a share of this quota. For further information contact BIC/CAGNE, Department of Commerce, Washington, D.C. 20230.

Notwithstanding these restrictions, total U.S. agricultural exports amounted to \$39.9 million in 1976 on an f.o.b. basis, compared with \$7.4 million in 1974.

Principal agricultural imports by Syria from the United States were flue-cured and burley tobaccos, wheat flour, yellow corn, rice, and soybean oil. Financing of most of Syria's rice and soybean oil purchases, and some of the U.S. tobacco, was handled under Title I, P.L. 480. The principal U.S. processed-food products imported include corn oil, almonds, mustard, flour, catsup, chili sauce, meat sauces, mayonnaise, soups, and flavoring syrups. □

facilities—and for the time being the preference is for bagged products—a bulk handling facility is under construction at the port of Tartous, to be completed by 1978. Before the conflict in Lebanon, some U.S. corn and soybean meal was shipped to Syria via the Beirut port silos, where Lebanese buyers took full cargoes in bulk, and bagged the feed ingredients for local distribution and reexport to Syria.

The resumption of "normal" shipping to Beirut should offer U.S. shippers a better opportunity to sell bulk products, which will be bagged for shipment to Syria, until bulk facilities become operational at Syrian ports.

The expansion of the Syrian poultry industry offers numerous opportunities to U.S. grain and feed exporters, as well as suppliers of poultry equipment and veterinary products. Although U.S. poultry lines are common in the Middle East (and Syria is no exception), imports of parent stock normally are supplied by European hatcheries specializing in these lines.

Over the years, there has been some foreign investment in the Syrian poultry industry, but Lebanese capital provided the major source. A few Lebanese poultry companies have branch operations in Syria, which were expanded in 1975 and 1976 during hostilities.

In addition, a few U.S. companies have reviewed investment opportunities in the poultry industry during the past 2 years, but none so far apparently has made any commitments to invest.

In 1976, the Syrian Government requested the U.S. Agency for International Development to provide a team of U.S. experts to review the Syrian poultry industry and make recommendations for further development. □

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## War Conditions Imperil Ethiopia's Food Supply

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By H. Charles Treakle  
and Lawrence A. Witucki

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**E**thiopia faces a serious food shortage and trade disruptions because guerrilla warfare is cutting off access to rail and port facilities. The rail line between Addis Ababa and Djibouti, the port city and capital of the newly independent Republic of Djibouti, has been overrun by guerrillas, and two ports in Eritrea are threatened.

Should all ports be cut off, Ethiopia would have to turn to its overland connection with Kenya as a conduit for vital food imports, as well as for important Ethiopian exports such as coffee, hides and skins, oilseeds, and sugar. Indications are that this route could increase in importance anyway, given the limitations of Ethiopia's remaining seaport and Kenya's desire to expand trade with countries outside the former East African Community.

Djibouti, on the Gulf of Aden, long has been Ethiopia's principal shipping center because of that port's rail link with Addis, until recently handling up to 60 percent of all Ethiopian imports and exports.

The Franco-Ethiopian Railway linking Addis and Djibouti was begun in 1897 and completed for use in 1917. Before the current

strife, trains ran on this 487-mile line three times a week in each direction, covering the distance in a day and a night. The line annually transported over 400,000 tons of freight and a large number of passengers between Addis Ababa and Djibouti.

The port facilities of Djibouti are among the best in the waters bordering the Indian Ocean. Ocean-going vessels may enter the harbor and berth alongside the wharf either by day or night, and 11 berths are available, of which four are for bunkering purposes.

In addition, Djibouti has been a free port since 1949, and the free port zone has considerable space for leasing to individuals or ships.

Before the closure of the Suez Canal in 1967, the number of ships calling at Djibouti reached a high of 3,074 in 1965; after closure, the figure fell to 983 in 1968. When the Canal reopened in 1975 shipping through this port picked up and again accounted for almost two-thirds of Ethiopian shipping.

Rail and road links with the Ethiopian Red Sea port of Massawa have been severed, leaving Assab, also on the Red Sea, as the only accessible Ethiopian port. It has no rail line and is too small to handle the country's normal shipping needs.

Ethiopia also lacks the

trucks to transport food and other supplies adequately from Assab. This shortage of trucking facilities likewise prevents domestic production from being moved from farms and food-surplus areas to points of scarcity.

Stepped-up trade and cooperation with Kenya could give Ethiopia some relief from its current food supply problems and economic difficulties.

Kenya has adequate food supplies and sufficient trucks to initiate food shipments northward to Ethiopia, but it probably would require additional resources to maintain such shipments.

The new, all-weather road from Nairobi to Addis Ababa should encourage an increase in regular trade between the two countries. However, the gravel top of the northern Kenyan portion of the road presents maintenance problems.

Kenya's exports to Ethiopia totaled about \$3.8 million, including \$1.3 million in wheat and tea, during 1976. This is much lower than Kenya's \$55.5 million exports to Tanzania, or the \$17.8 million to Zambia. Exports to Ethiopia, however, have been increasing by 13 percent a year during 1971-76.

This trade is highly unbalanced, with Kenyan imports from Ethiopia worth less than one-tenth of its exports to Ethiopia in recent years and in a downtrend since 1973. Yet the potential of Ethiopia's market could exceed that for many of Kenya's other neighbors.

Moreover, Kenya is considering increased trade with Ethiopia and Sudan to compensate for the greatly reduced trade in Eastern Africa since the breakdown of the East African Community (EAC) made up of Kenya, Tanzania, and Uganda. Kenya's Foreign Minister recently stated that the country

avored a new enlarged East African Community, which would be less vulnerable to political disagreements.

Tanzania apparently is turning to the countries south of it for increased trade relations and in early 1977 closed its border with Kenya. This has not only slashed Kenya's trade with Tanzania but has also greatly reduced Kenya's access to Zambia's market, as much of Kenya's trade with Zambia once passed through Tanzania.

Despite other uncertainties, Ethiopia's foreign trade situation so far has been an area of strength. The coun-

try's level of foreign exchange reserves is currently estimated to be sufficient for about a 12-month import coverage and, furthermore, this surplus has been maintained for 4 years running. With coffee prices still at a high level, Ethiopia is in a strong external economic position.

Ethiopia's main exports are agricultural products—coffee, hides and skins, pulses, oilseeds, live animals, and sugar (see table)—and the general index of wholesale prices for these items in Addis Ababa has remained well above the 1968 base year. Throughout 1975,

prices rose steadily for nearly all export items, and coffee continued to rise all through 1976.

As early as the end of the first quarter of 1976, Ethiopia's coffee price index was officially listed at 177 (1968=100), and by the end of 1976, green coffee prices had doubled their March price level. Increases in the value of coffee exports have been principally due to the high world price, rather than a substantial increase in the volume of production.

On the other hand, fewer oilseeds and pulses are reaching the export market, and the annual value of this

important export will probably be less than in earlier years. This appears to be due to a lower level of production of haricot beans and to a ban on the export of certain pulses essential for use in the domestic market.

On the import side, Ethiopia normally has purchased a relatively small amount of agricultural items, usually well under 5 percent of total imports. Before the current disturbance, imports of 200,000-300,000 tons of cereal were estimated as necessary to meet domestic needs, and now considerably more will probably be required. □

## U.S. Boosts Share of Dutch Fats, Oils Market

**T**he United States increased its share of Dutch soybean and tallow and grease imports in 1976, as Netherlands fats and oils consumption rose by 10 percent. Demand is expected to continue strong in 1977.

Behind this climb is a strengthening in the economies of the Netherlands and other European Community countries, which resulted in a 22 percent rise in Dutch use of fats and oils for technical purposes in 1976.

The Netherlands imported

a total of 1.62 million metric tons of U.S. oilseeds, compared with 1.16 million in 1975. Dutch imports of fats and oils from the United States totaled 110,800 tons, up 35 percent from 1975's 82,300 tons.

The U.S. market share of Dutch soybean imports in 1976 was 91.5 percent, up from 80.9 percent in 1975. The strong preference for U.S. soybeans in the Netherlands pushed these imports to 1.60 million tons in 1976, 40 percent greater than the 1.14 million tons of the previous year. Those of Brazil—a major competitor—remained virtually unchanged at some 145,000 tons.

The other major U.S. oilseed imported by the Neth-

erlands was peanuts, Dutch imports of which fell from 22,300 tons in 1975 to 5,900 in 1976. The 74 percent reduction resulted from relatively high U.S. prices, which caused importers to turn away from U.S. peanuts to those from India.

Conversely, U.S. fats and oils were priced more competitively in 1976 than those from other major suppliers and increases were recorded in Dutch imports of U.S. sunflowerseed, corn, and marine oils. Linseed oil imports were smaller.

By category, 1976 imports of major U.S. vegetable oils, compared with 1975's, were: Sunflowerseed oil, 1,900 tons (+73 percent); corn oil, 4,300 tons (+126 percent); and linseed oil, 2,100 tons (-53 percent).

Imports of U.S. lard were 4,700 tons, a gain of 18 percent over the previous year's, and tallow and grease, 53,000 tons, up 43 percent.

Dutch demand for fats and oils is expected to remain strong throughout 1977, powered by the still-

growing sales of fats- and oil-based technical products and compounded feed. Total import growth will be minimal, however, held back by reductions in crushings, which set a record in 1976. Dutch purchases and crushings of U.S. soybeans are expected to be off slightly, but further gains are projected in imports of coconut and palm oils.

Dutch exports of fats and oils were spotty in 1976, those to the European Community rose moderately, while those to other destinations—particularly to the Middle East—fell sharply, limiting the overall export gain to 5 percent. Exports are expected to follow the same pattern in 1977.

**Production.** The Netherlands is a minor producer of oilseeds but a major manufacturer of butter and animal fats, although total output of oilseeds and fats and oils in 1976 were both lower than in the previous year.

Oilseed production in 1976 was 4 percent less than the 1975 total, 47,450 tons, compared with 49,680 tons. Rapeseed, with an out-

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*Based on dispatch from James A. Hutchins, Jr., U.S. Agricultural Attaché, The Hague.*

## Australia's New Plan Aids Beef Industry

The Australian Government, after considering a number of proposals, has announced a seven-point plan as a first step to assist the cattle industry. The aid program is estimated to cost the Federal Government be-

tween US\$33 million and \$40 million over the next 12 months, but some observers believe the program's total cost could exceed \$110 million (A\$100 million).

The plan includes: 1) Cash grant of US\$11 per head for disease control programs and spaying young heifers, limited to \$2,200 per producer; 2) cash grant of \$6.6 million for setting up a national beef carcass classification scheme;

3) 2-year moratorium on financial obligations to hard-hit producers in central Queensland; 4) Price justification tribunal inquiry into

beef marketing and processing costs;

5) initiatives to introduce price stabilization scheme; 6) urgent Federal Government discussion with State Governments to ensure availability of carry-on loans and house-hold support; and 7) examination of ways to improve the relative equality position of beef producers in remote areas.

Perhaps the most significant feature of the plan is the grant for disease control and spaying of young heifers. This subsidy should bring about an improvement in producer cash flow. □

## Swedish Grain Sold to Poland

On August 19, the Swedish Grain Trade Association sold Poland 100,000 tons of winter wheat, 35,000 tons of spring wheat, and 20,000 tons of rye. Delivery dates are September-December for winter wheat, October-December for spring wheat, and September for rye.

Sweden signed a 3-year agreement with Poland last March to supply 300,000 tons of wheat annually. In 1977/78 Sweden is expected to have about 730,000 tons of wheat and 300,000 tons of coarse grains available for export. □

turn of 34,200 tons, was 7 percent lower, but poppy seed gained 69 percent and flaxseed 4 percent.

Setting a record in 1976, total crushings of oilseeds and other oilbearing materials—imported and domestic—were 12.5 percent higher than the previous year's output—1.8 million tons of raw materials, compared with 1.6 million in 1975. Oil produced was up 10 percent to 452,700 tons.

Although the volume of soybeans crushed in 1976, at 1.49 million tons, was below the 1974 record of nearly 1.50 million, last year's soybean oil total hit a new high at 271,000 tons, surpassing the 1974 record by about 2,000 tons. The gain resulted from the higher average oil content of U.S. soybeans. Oil output from EC-origin beans was slightly less than in 1975.

Soybean and rapeseed meal production increased 10 percent or more, compared with the preceding year's. Soybean meal production went from slightly more than a million tons to 1.17 million. Rapeseed meal

rose from 41,900 to 50,100 tons in the same period. Total meal outturn was up 12 percent—from 1.20 million tons to 1.34 million.

**Imports/exports.** In 1976, imports of oilseeds and other oil-bearing materials by Dutch crushers amounted to 1.32 million tons (oil basis), 5.6 percent more than the 1.25 million tons imported in 1975. Imports of most of these raw-material categories were considerably larger than in the previous year, although imports of vegetable oils still were up by 7 percent between the 2 years—473,900 tons in 1976, compared with 442,600 in 1975. Export demand determines the size of imports of both raw materials and oils.

There was a 69 percent rise in imports of coconut oil to 107,000 tons, 23 percent in sunflowerseed oil imports to 30,900 tons, and 35 percent in linseed oil to 22,000 tons. The only vegetable oils whose imports fell between 1975 and 1976 were soybean, palm kernel, and peanut oils.

The Netherlands bought

sizable amounts of vegetable oils from countries other than the United States, as follows (in tons);

- **Coconut oil.** West Germany (78,000) and the Philippines (13,390).

- **Palm kernel oil.** The EC (about 17,000), Malaysia (9,270), Indonesia (4,170), and Zaire (3,730).

- **Palm Oil.** Malaysia (134,120), Indonesia (43,970), and Zaire (6,380).

- **Soybean oil.** The EC (40,700), especially West Germany and Belgium. Owing partly to a boost in soybean crushings in the Netherlands, oil imports from the EC dropped to the present level from 72,500 tons in 1975.

- **Rapeseed oil.** Almost exclusively from the EC—mainly France and West Germany (about 11,200).

- **Sunflowerseed oil.** By far the largest supplier was West Germany (15,000), the USSR and other East European countries (9,400).

- **Linseed oils.** Higher imports in 1976, mainly from Argentina, Uruguay, and India (breakdown unavailable). □

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## USSR Expects Record Cotton Crop

**T**he USSR is expected to harvest a record cotton crop this year, exceeding the 8.4-million-metric tons of seed cotton (122 million 480-lb bales of lint cotton harvested in 1974. Growing conditions in the principal production areas improved considerably, following early season difficulties.

This year's crop ripened earlier than usual—in some areas by a week and in other areas by as much as 10-12 days. Thus, chances of damage by cold and frost—which cut the 1975 and 1976 harvests considerably—have been lessened.

Harvesting began earlier than usual—with favorable conditions reported in most areas. In mid-September, it was reported that the harvesting rate was the fastest on record. However, conditions in October remain a determining factor.

Uzbekistan, the major cotton producing Republic in the USSR, expects to meet its pledge for a record 5.36 million tons of seed cotton this year. Harvesting started 1 week earlier than usual,

and as of September 21, cotton sales to the Government were 700,000-800,000 tons more than on this date in 1975 and 1976.

Turkmenistan, which has pledged a record harvest of 1,085,000 tons, also has reported a good crop. Harvesting there also began 1 week earlier than usual.

Tadzhikistan, with a pledge of 850,000 tons, has reported high yields and expects a good crop. Unfavorable weather reportedly caused some difficulty at the start of harvesting in late August, but conditions improved considerably in September.

Azerbaijan, the only cotton producing Republic in the Transcaucasus, has pledged 500,000 tons this year, and despite some difficulties with unstable weather earlier, reportedly has grown a very good crop. Harvesting began earlier than in 1976.

Few reports are available

*By Angel O. Byrne, Foreign Demand and Competition Division, Economic Research*

on crops in Kazakhstan and Kirgizia. However, late August-early September reports indicated favorable conditions and sufficient supplies of irrigation water.

Earlier in the season, Kirgizia reportedly experienced some crop damage from flooding and earthquake. The

extent of crop damage is not known.

Cotton in the USSR was planted on a record 2,979,000 hectares this year, 30,000 hectares more than in 1976 and close to 100,000 hectares more than in 1974, when total output hit a record level. □

## Drought Cuts Thai Harvest

Thailand's grain production—excluding rice—for 1977, somewhat diminished by drought, is expected to total about 2 million metric tons, compared with 3 million tons in 1976.

Rice output for 1977 is forecast at 15 million tons (paddy). Export demand is strong, and shipments may reach the record target of 2.4 million tons set for calendar 1977—a level that would all but deplete stocks.

The 1977/78 corn harvest is now estimated at about 1.8 million tons, leav-

ing about 850,000 tons for export. The outlook is for a slightly higher level of grain sorghum exports during 1977/78 (July-June). However, the 1977 outturn of grain sorghum is estimated at 250,000 tons, 17 percent less than in 1976 because of smaller area.

Tapioca's position relative to other grain crops has improved. Output of tapioca products is estimated at a record 5 million tons for 1977, and starch content is higher than that of last year's crop.

Thailand's wheat and flour imports, continuing their upward trend, are estimated at 150,000 tons for 1977/78 (July-June) with the United States supplying more than 70 percent of this quantity. Thai mills demand a high protein wheat, and the record 1977 U.S. wheat harvest provides a ready supply. □

*Based on dispatch from Cline J. Warren, U.S. Agricultural Attaché, Bangkok.*